321 PCC VALVE/VENTURI VAULTS

321.01 DESCRIPTION

Work consists of excavation, backfill and compaction beyond trench excavation limits, disposal of excess material, furnishing and constructing reinforced PCC vaults complete with gravel base, piers, joints, armored seats for top slabs, sumps, steps, water stops, anchor bolts, stack risers, valve box extension, lifting inserts, and manhole frames and covers at locations indicated in the Contract documents and/or as directed.

321.02 SUBMITTALS

Shop drawings shall be submitted per 105.02 for reinforcing steel layout, cast-iron frames and covers, vault steps and anchor bolts for venturi vaults.

321.03 MATERIALS

Reinforcing Steel - 812.02, Grade 60

Cast-in-Place PCC - 817, Class B

Precast Vaults - 821.04

Precast PCC Rings - Precast valve manhole rings and reducer rings shall be per 821.04. Precast manhole rings shall be cast with joint groove to receive compression seal.

"O-ring" Seals - 807.06(B)

Manhole Brick - 806.01(A)

Manhole Steps - 821.07

Manhole Frames, Covers and Sumps - Gray-iron castings for frames and covers shall be per 815.04. Castings for sumps shall be per AASHTO M105, Class 35B.

321.04 CONSTRUCTION REQUIREMENTS

Precast rings may be used in lieu of brick stack risers; an adapter shall be provided in vault opening to receive precast unit.

Vaults shall be constructed per contract drawings.

Sumps shall be recessed to provide a flush surface between grate top and vault floor.

Manhole steps shall be cast into walls as indicated.

The bottom flange of manhole frame shall have two 3/4 inch diameter holes drilled or cast therein, directly opposite each other. Corresponding holes shall be drilled, a minimum of two inches deep, into the precast concrete ring or brick masonry upon which the frame sits. Steel dowels shall be inserted through and into these holes to prevent lateral movement of frame and cover during backfill operations. Dowels shall be #5 rebars, three inches minimum length. Brick masonry, not exceeding four inches vertical depth, may be used to adjust frame and cover to approved grade when riser stack consists of precast rings.

Equipment for the installation or extrusion of sealant into joint spaces shall be a heavy-duty air-operated pump, capable of continuously feeding the compound under pressure, and capable of completely filling the joint space without discontinuities and without the formation of voids or entrapped air. Joints shall be dry, cleaned of scale, dirt, dust, curing compound and foreign matter prior to application. Cleaning shall be accomplished in a neat workmanlike manner with suitable tool(s) designed for cleaning concrete joints. The joint sidewalls shall be sandblasted and blown clean of loose sand prior to sealant application.

Suitable bond breaker shall be placed in joint recess. Bond breaker shall be compatible with the sealant, and shall not adhere to the sealant. Avoid overfilling the joint space. Joints shall be filled in a neat workmanlike manner from flush to 3/16 inch below the adjacent surface.

Vaults shall be moistureproofed as specified in 326.

After curing, remaining excavated area around vaults shall be backfilled per 207.

321.05 MEASURE AND PAYMENT

The unit of measure will be each complete.

Payment for PCC Valve/Venturi Vaults will be made at the contract unit price per each, which payment will include excavation and backfill beyond trench excavation pay limits, moistureproofing, steps, sumps, and all labor, materials equipment, tools, and incidentals needed to complete work specified.